

BOOK REVIEWS

THE LARAMIE FLORA*

After many and vexatious delays, Knowlton's revision of the Laramie Flora has at last made its appearance. I saw the practically completed manuscript years ago, and it is regrettable that works of this kind cannot be issued with reasonable promptness after being submitted for publication.

Now that we have the book it is all that could be expected, forming an excellent foundation on which to build further work dealing with the fascinating problem of the uppermost Cretaceous floras, and their relation to those of the lower Tertiary. The exceedingly complete historical summary shows us clearly how the essential facts, often obscured by mistakes and misunderstandings, have gradually taken shape, so that to-day it is possible to distinguish what is evidently a single flora, and discuss its characters and relationships. This flora indicates warm and moist conditions but is very different from the present neotropical region. The great representation of *Ficus*, with about 40 species is a salient feature. Stanley enumerates 23 valid species of *Ficus* from Mexico to-day, and 41 from Mexico and Central America combined, but these would not be found together in a flora as restricted as the Laramie presumably was. Berry† has lately pointed out the probability that several of the "species" of *Ficus* represent variations of a single type and has proposed to unite at least two of the Laramie species with the Eocene *F. mississippiensis* (Lesq.) Berry. This may perhaps be correct but while it is certainly true that diverse appearing leaves may even come from a single tree, it is probable on the other hand, that the Cretaceous and Eocene plants, if we knew them perfectly, would prove to be different. The subject is a large and difficult one, but we may doubtless get some light on the rate of modification of specific types, not only from fossils but also from a study of geographical distribution, particularly on islands.

Under *F. navicularis* Ckll. Knowlton remarks that it is doubtless different from *F. lanceolata* Heer of the Swiss Miocene.

* The Laramie Flora of the Denver Basin, with a Review of the Laramie Problem. F. H. Knowlton, U. S. Geological Survey, Professional paper 130. 175 pp., 28 plates. 1922.

† Additions to the Flora of the Wicox group. U. S. Geol. Survey, Prof. paper 131-A. 1922.

This must be admitted though I saw Heer's types of *lanceolata* at Zurich and they are strikingly similar to our Laramie plant from Marshall, Colo. Knowlton states that the name *navicularis* should be applied to the American species but unfortunately it was founded exclusively on Heer's plant, his name being a homonym. The Laramie plant (type from Marshall) described as *navicularis* by Knowlton may stand as **F. Knowltoni** n. n.

The cryptogamic plants are represented by quite a series of ferns, some of them striking forms, a single imperfectly known *Equisetum*, and an algal form which Lesquereux called *Delesseria fulva*. This last cannot be referred to any particular genus and should be consigned to Seward's blanket genus *Algites* or better rejected as indeterminate. Standing as a *Delesseria* it will be taken as evidence of marine conditions.

Conifers are poorly represented, doubtless owing to the conditions in the locality. The fragments of *Sequoia* etc., as the author suggests, may have been washed from higher ground. We must not forget that there was doubtless an upland flora, very distinct from that of the swampy region, of which we cannot expect to recover more than small fragments.

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VON TUBEUF: MONOGRAPHIE DER MISTEL*

It is not often that the reviewer has before him a monograph as complete in every detail as this one on the mistletoe by the author of the well-known *Pflanzenkrankheiten durch kryptogam Parasiten verursacht*, published in 1895. The monograph is the result of many years of study and experimentation on the part of Dr. von Tubeuf of the University of Munich, who has been ably assisted by Dr. Gustav Neckel, professor in the University of Berlin and Professor Dr. Heinrich Marzell. The book in large octavo is printed attractively on glazed paper, which allows of the reproduction of the photographs and maps in the body of the text.

*Tubeuf, Karl Freiherr von: *Monographie der Mistel*. Mit 5 beigehefteten lithographierten Karten und mit 35 Tafeln sowie 181 Figuren im Text. Seiten xii+832. München und Berlin, 1923. Druck und Verlag von R. Oldenberg, München, Glückstrasse 8.